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ABSTRACT

The development of the Alberta Diagnostic Reading Program (ADRP) was based on a current psycholinguistic theory that describes reading as a process in which the reader uses background information to communicate with the author. To ensure its usefulness and effectiveness, the developers of the ADRP sought the advice and direct involvement of many teachers. Developers also recognized that the program had to address both evaluation and instructional components to help teachers instruct diagnostically. Six strategies for evaluating students' reading abilities were developed: a diagnostic reading checklist, oral reading miscues, retelling, comprehension questions, and cloze and sentence verification. In addition, instructional strategies were developed to help students process print information and background knowledge in a variety of ways. An interpretation chart was designed to help teachers assess each student's overall reading ability. This profile can then be matched with one of five identified reading patterns and used by teachers to plan appropriate follow-up instruction. To facilitate access to the program, ADRP materials were organized into four handbooks covering evaluation strategies, reading passages, duplicating masters, and instructional strategies. Pilot pretests and posttests indicated that the ADRP was a success: students' reading performances showed significant improvements and teachers responded enthusiastically. (JD)

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DEVELOPMENT OF THE ALBERTA DIAGNOSTIC READING PROGRAM

Frank G. Horvath and Shirley Machura

A diagnostic reading program based on a cognitive processes approach has been developed by Alberta Education. Initially, an informal survey was conducted in 1983 to find out from elementary classroom teachers what kind of diagnostic reading materials would be the most helpful to them. From their comments, it was clear that the reading tests available commercially did not meet their needs satisfactorily. The teachers were looking for a more practical means of getting information about how individual students in their classes read, especially those students who either have difficulty with or are not challenged by grade level materials. The teachers wanted this information to be in a form that would reveal specific needs of their students readily, enabling them to provide the most efficient instruction without delay. The principles guiding the development of the Diagnostic Reading Program were derived in part from these teachers' views.

The Diagnostic Evaluation Team and the members of the Steering Committee believed it was important to build the program around a solid theoretical framework according to research in language development. The approach to reading had to be supportive of the goals of the Alberta Elementary Language Arts Program of Studies as well. Thus, the Diagnostic Reading Program was based on current psychoLinguistic theory that describes reading as a process in which the reader uses background knowledge to get meaning from print in

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order to communicate with the author. A number of cognitive processes must operate simultaneously in order for this to occur. Dr. Grace Malicky and Dr. Bill Fagan of the University of Alberta provided the initial framework of the program for consideration by the Diagnostic Reading Steering Committee. From the beginning, the Diagnostic Reading Program was based on evaluating the cognitive processes of attending, analysing, associating, predicting, inferring, synthesizing and monitoring while students engage in "real" reading activities; that is: meaningful passages rather than word lists.

Teacher Involvement

The developers planned to incorporate the expertise of elementary classroom teachers in all phases of development of the program. By involving large numbers of teachers, the developers believed that the usefulness and effectiveness of the materials in a regular classroom setting would be assured. Fifty-seven teachers serving on eight regional committees from throughout the province worked directly on writing the reading passages, refining the evaluation strategies, and offering ideas for follow-up instruction.

The language arts staffs from 14 elementary schools piloted the program during the 1985-1986 school year. Individual committee members and 12 resource room teachers tried the program in their schools as well. Close communication between the pilot teachers and the Diagnostic Evaluation Team was maintained throughout the year. The feedback provided by the pilot teachers helped to gauge the depth of analysis of the students' responses necessary to make the materials as helpful and efficient as possible for use by language arts teachers.

Organization of the Program

The developers recognized that the program had to address both evaluation and instructional components in order to help teachers to teach diagnostically. It was believed important, too, that a sufficient variety of high quality materials in both components was needed. Thus, although 96 reading passages were developed, only 48 of the very best passages survived the rigorous field testing and selection process. All of the passages were written initially by the 57 classroom teachers based on their analysis of the vocabulary, sentence length and complexity, and content of basic reading materials used throughout the province. It was decided that the lengths of the passages would range from about 125 words at the Grade 1 level to about 250 words at the Grade 6 level. This would ensure that each narrative or informational passage was sufficiently long to yield reliable information about how a student reads.

The Grades 1 to 3 passages were written in narrative form to reflect the genre most commonly used in primary reading materials. Two levels of reading difficulty for each of these grades were planned. The Grades 4 to 6 passages were written in both narrative and informational forms, but only one level of difficulty in each upper elementary grade was chosen after the first round of field testing. The choice of only one level of difficulty was necessary because field test results on these passages indicated that an insufficient difference between beginning grade level and end of grade level scores existed at the Grades 4, 5 and 6 levels. When the passages were completely developed, they were normed again on approximately 7,600 students in 297 classrooms to ensure that the final difficulty level of each passage was appropriate for the grade level intended.

a. Evaluation Strategies

Six evaluation strategies, the Diagnostic Reading Checklist, Oral Reading Miscues, Retelling, Comprehension Questions, Cloze and Sentence Verification, were developed to provide teachers with alternative ways of finding out how individual students in their classrooms read. Some of the evaluation strategies were designed to be group-administered but most must be administered to one student at a time. These strategies were also normed on 1,440 Alberta students during the pilot year to establish appropriate criteria for identifying the frustration, instructional and independent performance levels of students. The materials are unique among the diagnostic tests commercially available to Alberta teachers partly because the norms were based on the reading performance of Alberta students.

The checklist in the Diagnostic Reading Program was intended to help teachers focus their observations on word identification and comprehension reading behaviors. Depending on the student being observed, the checklist either provides teachers with direction for further assessment or for instructional planning. Teachers found this strategy to be practical because information is collected during regular classroom instruction and additional class time is not spent on testing. They also found that the checklist was useful for communicating with other teachers and with parents about a student.

The Oral Reading Miscues Strategy was selected as a means of helping teachers focus on how students identify words while reading a passage. Classroom teachers analyse the errors or miscues that students make during oral reading

to determine if the miscues are meaningful in relation to the passage and whether the miscues reflect the students' ability to predict words from context and background knowledge. Miscues also provide insight into how well students are able to analyse print clues and how well they are able to monitor their miscues and correct them. This strategy was already familiar to many pilot teachers.

The Retelling Strategy was included in the program to provide information about how students reconstruct information they have read. Teachers analyse retellings of passages to find out whether students have drawn inferences and synthesized ideas from their background knowledge and the passage information. Teachers also examine the retellings to see if students used the same words and ideas found in the original passage. Although learning how to analyse students' retellings was difficult at first, the pilot teachers soon recognized the retelling as a rich source of information about students' reading.

Specially constructed questions were developed for each reading passage. The Comprehension Questions Strategy was designed to assess the processes of attending/analysing, synthesizing, inferring and associating, and to determine how students integrate their background knowledge with passage information. The questions were normed in order to establish criteria for determining students' instructional reading level for each passage.

Each reading passage was turned into cloze form to find out how students use context clues and their background knowledge to predict words. In the Cloze

Strategy, students are given a passage to read in which every fifth word has been deleted. Teachers analyse the words that the student supplied in the cloze blank to determine if the substitute words make sense in context. Normative data were also used for this strategy to establish criteria for determining a student's instructional reading level.

The Sentence Verification Strategy was designed to focus on the processes students use to identify sentences that are consistent with the information in the passage. The sentences were made up of plausible inferences from passage information, exact passage information, syntheses of information from the passage or information that is not based on the passage. Since students were not required to generate ideas, only select them, pilot teachers liked this strategy because it provided different but useful information about how students are reading.

b. Instructional Strategies

Many pilot teachers regarded the instructional strategies component of the program as the most important. The strategies were found to be very effective for providing instruction that would address each student's reading strengths and weaknesses identified during evaluation. These instructional strategies were designed so that students process both print information and background knowledge in a variety of ways. It was also believed important to ensure that instructional activities require that students be involved in "real" reading activities in which students read stories or passages rather than isolated words.

By working with pilot teachers, it became apparent to the developers that a specific tool was required to help teachers use the information collected from several different evaluations before planning instruction. Teachers needed some means of arriving at the student's overall pattern of strengths and weaknesses in order to select an appropriate instructional strategy. An interpretation chart, along with the following five reading patterns that students typically exhibit, appeared to be helpful to the pilot teachers.

1. Effective use of all cognitive processes to integrate clues from the print on the page with background knowledge
2. Too great a reliance on background knowledge
3. Too great a reliance on print information
4. Adequate use of print information and background knowledge but difficulty integrating the two
5. Difficulty using either background knowledge or print information when reading

By matching the profile of the student with one of these reading patterns, teachers were able to synthesize or pull together the results of their students and plan follow-up instruction that was appropriate for each student.

c. Handbooks and Inservice Package

To facilitate access to the various components of the program, the materials were organized into four handbooks. The handbooks were designed to fit in a box which could be placed on a desk or shelf for easy reference. The *Evaluation Strategies*, Handbook 1, is the basic manual for the evaluation component of the Diagnostic Reading Program since it includes an introduction to the program and procedures for administering the six evaluation strategies.

All 48 passages were illustrated, organized into four equivalent forms and put in Handbook 2, *Reading Passages*. This handbook was designed so that students could read from it during administration of some of the evaluation strategies.

For ease of use, the evaluation materials that must be duplicated were contained in a single handbook, *Duplicating Masters*, Handbook 3, and cross-referenced to the *Evaluation Strategies* and *Reading Passages* handbooks.

At first, the pilot edition of the *Instructional Strategies*, Handbook 4, contained only the instructional strategies. It soon became clear during the pilot, however, that a guide for interpreting the diagnostic information gathered during evaluation properly belonged with the activity of planning instruction. As a result, interpreting results and planning follow-up instruction were placed in this handbook. The suggested instructional strategies and techniques found in this handbook were organized according to one or more of the cognitive processes.

Near the end of the pilot year, an inservice package was prepared for school jurisdiction personnel to help them work with classroom teachers during the dissemination and implementation of the Diagnostic Reading Program. Considerable care was taken to prepare a complete package consisting of a videotape depicting a Grade 4 teacher using the program with a particular student in his classroom, overhead transparencies showing the results of evaluation for another student, and a variety of duplicating masters.

The distribution of the inservice package was limited to 165 inservice leaders, a special group of teachers who attended an inservice training session provided by the Diagnostic Evaluation Team (Alberta Education) in October, 1986. These inservice leaders, nominated by their superintendents, represent nearly all of the school jurisdictions in the province. They have the responsibility of planning and conducting inservice sessions, and where possible, assisting classroom teachers with implementation in their jurisdictions.

Effectiveness of the Program

The materials in the Diagnostic Reading Program have been shown to be effective already. Pre and post tests of the pilot materials were carried out during the pilot year. Student results on Form D cloze passages administered in October 1985 (January 1986 for Grade 1) were compared with a re-test of the same Form D passages at the conclusion of the pilot study in May 1986. Students in all grade levels involved in the pilot project improved their performance on the cloze passages significantly more than did students in the control group.

Teachers involved in the pilot test of the materials expressed overwhelming support for the program. Although the teachers were required to use the materials with only six students during the pilot, many went beyond this requirement, with some administering the program to all of the students in their classes. The teachers reported that they gained insights not only into the reading behaviors of selected students but also into the reading process in general. They felt that, as a result of using the program, they had honed their informal observation skills and that they were better able to identify students' strengths and weaknesses during regular classroom activities than before the pilot. They felt more confident about providing instruction that would meet the needs of individual students in their classes.

If the results of the pilot are an accurate predictor of what teachers and students will gain by the use of the program, tremendous growth can be expected in the reading proficiency of Alberta students in the next two or three years. The challenge for school administrators is to provide the support that elementary language arts teachers need to implement this program in their classrooms.

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